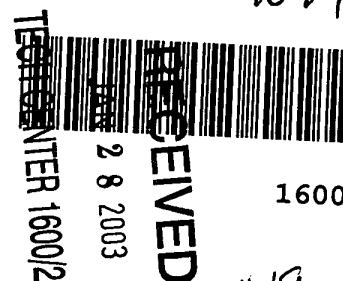


1644



#18

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/582,340B

DATE: 01/22/2003
TIME: 15:13:22

Input Set : A:\255-013.st25.txt

Output Set : N:\CRF4\01222003\I582340B.raw

3 <110> APPLICANT: Institute National De La Sante Et De La Recherche Medicale
 4 Raposo, Graca
 5 Thery, Clotilde
 6 Amigorena, Sebastian

8 <120> TITLE OF INVENTION: COMPOSITIONS AND METHODS USING LACTADHERIN OR VARIANTS
 THEREOF

10 <130> FILE REFERENCE: 702015.4002 KTM

12 <140> CURRENT APPLICATION NUMBER: US 09/582,340B

C--> 13 <141> CURRENT FILING DATE: 2003-01-10

15 <160> NUMBER OF SEQ ID NOS: 6

17 <170> SOFTWARE: PatentIn version 3.2

19 <210> SEQ ID NO: 1

20 <211> LENGTH: 1934

21 <212> TYPE: DNA

22 <213> ORGANISM: Homo sapiens

24 <220> FEATURE:

25 <221> NAME/KEY: CDS

26 <222> LOCATION: (61)..(1224)

27 <223> OTHER INFORMATION:

W--> 29 <400> 1

```

30 agaaccgccg ggggtctgag cagcccagcg tgcccattcc agcgcccgcg tccccgcagc      60
32 atg ccg cgc ccc cgc ctg ctg gcc gcg ctg tgc ggc gcg ctg ctc tgc      108
33 Met Pro Arg Pro Arg Leu Leu Ala Ala Leu Cys Gly Ala Leu Leu Cys
34 1                               5                               10                               15
36 gcc ccc agc ctc ctc gtc gcc ctg gat atc tgt tcc aaa aac ccc tgc      156
37 Ala Pro Ser Leu Leu Val Ala Leu Asp Ile Cys Ser Lys Asn Pro Cys
38                               20                               25                               30
40 cac aac ggt ggt tta tgc gag gag att tcc caa gaa gtg cga gga gat      204
41 His Asn Gly Gly Leu Cys Glu Glu Ile Ser Gln Glu Val Arg Gly Asp
42                               35                               40                               45
44 gtc ttc ccc tcg tac acc tgc acg tgc ctt aag ggc tac gcg ggc aac      252
45 Val Phe Pro Ser Tyr Thr Cys Thr Cys Leu Lys Gly Tyr Ala Gly Asn
46                               50                               55                               60
48 cac tgt gag acg aaa tgt gtc gag cca ctg gcc atg gag aat ggg aac      300
49 His Cys Glu Thr Lys Cys Val Glu Pro Leu Gly Met Glu Asn Gly Asn
50 65                               70                               75                               80
52 att gcc aac tca cag atc gcc gcc tca tct gtg cgt gtg acc ttc ttg      348
53 Ile Ala Asn Ser Gln Ile Ala Ala Ser Ser Val Arg Val Thr Phe Leu
54                               85                               90                               95
56 ggt ttg cag cat tgg gtc ccg gag ctg gcc cgc ctg aac cgc gca ggc      396
57 Gly Leu Gln His Trp Val Pro Glu Leu Ala Arg Leu Asn Arg Ala Gly
58                               100                              105                              110
60 atg gtc aat gcc tgg aca ccc agc agc aat gac gat aac ccc tgg atc      444
61 Met Val Asn Ala Trp Thr Pro Ser Ser Asn Asp Asp Asn Pro Trp Ile
  
```

ENTERED

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/582,340B

DATE: 01/22/2003

TIME: 15:13:23

Input Set : A:\255-013.st25.txt

Output Set: N:\CRF4\01222003\I582340B.raw

62	115	120	125	
64	cag gtg aac ctg ctg cgg agg atg tgg gta aca ggt gtg gtg acg cag			492
65	Gln Val Asn Leu Leu Arg Arg Met Trp Val Thr Gly Val Val Thr Gln			
66	130	135	140	
68	ggt gcc agc cgc ttg gcc agt cat gag tac ctg aag gcc ttc aag gtg			540
69	Gly Ala Ser Arg Leu Ala Ser His Glu Tyr Leu Lys Ala Phe Lys Val			
70	145	150	155	160
72	gcc tac agc ctt aat gga cac gaa ttc gat ttc atc cat gat gtt aat			588
73	Ala Tyr Ser Leu Asn Gly His Glu Phe Asp Phe Ile His Asp Val Asn			
74	165	170	175	
76	aaa aaa cac aag gag ttt gtg ggt aac tgg aac aaa aac gcg gtg cat			636
77	Lys Lys His Lys Glu Phe Val Gly Asn Trp Asn Lys Asn Ala Val His			
78	180	185	190	
80	gtc aac ctg ttt gag acc cct gtg gag gct cag tac gtg aga ttg tac			684
81	Val Asn Leu Phe Glu Thr Pro Val Glu Ala Gln Tyr Val Arg Leu Tyr			
82	195	200	205	
84	ccc acg agc tgc cac acg gcc tgc act ctg cgc ttt gag cta ctg gcc			732
85	Pro Thr Ser Cys His Thr Ala Cys Thr Leu Arg Phe Glu Leu Leu Gly			
86	210	215	220	
88	tgt gag ctg aac gga tgc gcc aat ccc ctg gcc ctg aag aat aac agc			780
89	Cys Glu Leu Asn Gly Cys Ala Asn Pro Leu Gly Leu Lys Asn Asn Ser			
90	225	230	235	240
92	atc cct gac aag cag atc acg gcc tcc agc agc tac aag acc tgg gcc			828
93	Ile Pro Asp Lys Gln Ile Thr Ala Ser Ser Ser Tyr Lys Thr Trp Gly			
94	245	250	255	
96	ttg cat ctc ttc agc tgg aac ccc tcc tat gca cgg ctg gac aag cag			876
97	Leu His Leu Phe Ser Trp Asn Pro Ser Tyr Ala Arg Leu Asp Lys Gln			
98	260	265	270	
100	ggc aac ttc aac gcc tgg gtt gcg ggg agc tac ggt aac gat cag tgg			924
101	Gly Asn Phe Asn Ala Trp Val Ala Gly Ser Tyr Gly Asn Asp Gln Trp			
102	275	280	285	
104	ctg cag gtg gac ctg gcc tcc tcc aag gag gtg aca gcc atc atc acc			972
105	Leu Gln Val Asp Leu Gly Ser Ser Lys Glu Val Thr Gly Ile Ile Thr			
106	290	295	300	
108	cag ggg gcc cgt aac ttt gcc tct gtc cag ttt gtg gca tcc tac aag			1020
109	Gln Gly Ala Arg Asn Phe Gly Ser Val Gln Phe Val Ala Ser Tyr Lys			
110	305	310	315	320
112	gtt gcc tac agt aat gac agt gcg aac tgg act gag tac cag gac ccc			1068
113	Val Ala Tyr Ser Asn Asp Ser Ala Asn Trp Thr Glu Tyr Gln Asp Pro			
114	325	330	335	
116	agg act ggc agc agt aag atc ttc cct gcc aac tgg gac aac cac tcc			1116
117	Arg Thr Gly Ser Ser Lys Ile Phe Pro Gly Asn Trp Asp Asn His Ser			
118	340	345	350	
120	cac aag aag aac ttg ttt gag acg ccc atc ctg gct cgc tat gtg cgc			1164
121	His Lys Lys Asn Leu Phe Glu Thr Pro Ile Leu Ala Arg Tyr Val Arg			
122	355	360	365	
124	atc ctg cct gta gcc tgg cac aac cgc atc gcc ctg cgc ctg gag ctg			1212
125	Ile Leu Pro Val Ala Trp His Asn Arg Ile Ala Leu Arg Leu Glu Leu			
126	370	375	380	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/582,340B

DATE: 01/22/2003
TIME: 15:13:23

Input Set : A:\255-013.st25.txt

Output Set: N:\CRF4\01222003\I582340B.raw

```

128 ctg ggc tgt tag tggccacctg ccacccccag gtcttctctgc tttccatggg      1264
129 Leu Gly Cys
130 385
132 cccgctgcct cttggcttct cagccccctt aaatcaccat agggctgggg actggggaag      1324
134 gggagggtgt tcagaggcag caccaccaca cagtcacccc tccctccctc tttcccaccc      1384
136 tccacctctc acgggccctg cccagcccc taagccccgt cccctaacc ccagtcctca      1444
138 ctgtcctgtt ttcttaggca ctgagggatc tgagtaggtc tgggatggac aggaaggggc      1504
140 aaagtagggc gtgtggttct cctgccccctg tccggaccgc cgatcccagg tgcgtgtgtc      1564
142 tctgtctctc ctagcccctc tctcacacat cacattccca tgggtggcctc aagaaaggcc      1624
144 cgaagcccc aggtggaga taacagcctc ttgcccgtcg gccctgcgtc ggccctgggg      1684
146 taccatgtgc cacaactgct gtggccccct gtccccaaga cacttcccct tgtctccctg      1744
148 gttgcctctc ttgccccttg tcctgaagcc cagcgacaca gaagggggtg gggcgggtct      1804
150 atggggagaa agggagcgag gtcagaggag ccggcatggg ttggcagggg gggcggttgg      1864
152 ggccctcatg ctggcttttc accccagagg acacaggcag cttccaaaat atatttatct      1924
154 tcttcacggg
157 <210> SEQ ID NO: 2
158 <211> LENGTH: 387
159 <212> TYPE: PRT
160 <213> ORGANISM: Homo sapiens
162 <400> SEQUENCE: 2
164 Met Pro Arg Pro Arg Leu Leu Ala Ala Leu Cys Gly Ala Leu Leu Cys
165 1 5 10 15
168 Ala Pro Ser Leu Leu Val Ala Leu Asp Ile Cys Ser Lys Asn Pro Cys
169 20 25 30
172 His Asn Gly Gly Leu Cys Glu Glu Ile Ser Gln Glu Val Arg Gly Asp
173 35 40 45
176 Val Phe Pro Ser Tyr Thr Cys Thr Cys Leu Lys Gly Tyr Ala Gly Asn
177 50 55 60
180 His Cys Glu Thr Lys Cys Val Glu Pro Leu Gly Met Glu Asn Gly Asn
181 65 70 75 80
184 Ile Ala Asn Ser Gln Ile Ala Ala Ser Ser Val Arg Val Thr Phe Leu
185 85 90 95
188 Gly Leu Gln His Trp Val Pro Glu Leu Ala Arg Leu Asn Arg Ala Gly
189 100 105 110
192 Met Val Asn Ala Trp Thr Pro Ser Ser Asn Asp Asp Asn Pro Trp Ile
193 115 120 125
196 Gln Val Asn Leu Leu Arg Arg Met Trp Val Thr Gly Val Val Thr Gln
197 130 135 140
200 Gly Ala Ser Arg Leu Ala Ser His Glu Tyr Leu Lys Ala Phe Lys Val
201 145 150 155 160
204 Ala Tyr Ser Leu Asn Gly His Glu Phe Asp Phe Ile His Asp Val Asn
205 165 170 175
208 Lys Lys His Lys Glu Phe Val Gly Asn Trp Asn Lys Asn Ala Val His
209 180 185 190
212 Val Asn Leu Phe Glu Thr Pro Val Glu Ala Gln Tyr Val Arg Leu Tyr
213 195 200 205
216 Pro Thr Ser Cys His Thr Ala Cys Thr Leu Arg Phe Glu Leu Leu Gly
217 210 215 220
220 Cys Glu Leu Asn Gly Cys Ala Asn Pro Leu Gly Leu Lys Asn Asn Ser

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/582,340B

DATE: 01/22/2003
TIME: 15:13:23

Input Set : A:\255-013.st25.txt

Output Set: N:\CRF4\01222003\I582340B.raw

221 225 230 235 240
 224 Ile Pro Asp Lys Gln Ile Thr Ala Ser Ser Tyr Lys Thr Trp Gly
 225 245 250 255
 228 Leu His Leu Phe Ser Trp Asn Pro Ser Tyr Ala Arg Leu Asp Lys Gln
 229 260 265 270
 232 Gly Asn Phe Asn Ala Trp Val Ala Gly Ser Tyr Gly Asn Asp Gln Trp
 233 275 280 285
 236 Leu Gln Val Asp Leu Gly Ser Ser Lys Glu Val Thr Gly Ile Ile Thr
 237 290 295 300
 240 Gln Gly Ala Arg Asn Phe Gly Ser Val Gln Phe Val Ala Ser Tyr Lys
 241 305 310 315 320
 244 Val Ala Tyr Ser Asn Asp Ser Ala Asn Trp Thr Glu Tyr Gln Asp Pro
 245 325 330 335
 248 Arg Thr Gly Ser Ser Lys Ile Phe Pro Gly Asn Trp Asp Asn His Ser
 249 340 345 350
 252 His Lys Lys Asn Leu Phe Glu Thr Pro Ile Leu Ala Arg Tyr Val Arg
 253 355 360 365
 256 Ile Leu Pro Val Ala Trp His Asn Arg Ile Ala Leu Arg Leu Glu Leu
 257 370 375 380
 260 Leu Gly Cys
 261 385

264 <210> SEQ ID NO: 3

265 <211> LENGTH: 2077

266 <212> TYPE: DNA

267 <213> ORGANISM: Murine

269 <220> FEATURE:

270 <221> NAME/KEY: CDS

271 <222> LOCATION: (46)..(1434)

272 <223> OTHER INFORMATION:

W--> 274 <400> 3

275 gaattccgca tcagagcgcg tggacctttt cccgcgtccc gcagc atg cag gtc tcc 57
 276 Met Gln Val Ser
 277 1
 279 cgt gtg ctg gcc gcg ctg tgc ggc atg cta ctc tgc gcc tct ggc ctc 105
 280 Arg Val Leu Ala Ala Leu Cys Gly Met Leu Leu Cys Ala Ser Gly Leu
 281 5 10 15 20
 283 ttc gcc gcg tct ggt gac ttc tgt gac tcc agc ctg tgc ctg aac ggt 153
 284 Phe Ala Ala Ser Gly Asp Phe Cys Asp Ser Ser Leu Cys Leu Asn Gly
 285 25 30 35
 287 ggc acc tgc ttg acg ggc caa gac aat gac atc tac tgc ctc tgc cct 201
 288 Gly Thr Cys Leu Thr Gly Gln Asp Asn Asp Ile Tyr Cys Leu Cys Pro
 289 40 45 50
 291 gaa ggc ttc aca ggc ctt gtg tgc aat gag act gag aga gga cca tgc 249
 292 Glu Gly Phe Thr Gly Leu Val Cys Asn Glu Thr Glu Arg Gly Pro Cys
 293 55 60 65
 295 tcc cca aac cct tgc tac aat gat gcc aaa tgt ctg gtg act ttg gac 297
 296 Ser Pro Asn Pro Cys Tyr Asn Asp Ala Lys Cys Leu Val Thr Leu Asp
 297 70 75 80
 299 aca cag cgt ggg gac atc ttc acc gaa tac atc tgc cag tgc cct gtg 345

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/582,340B

DATE: 01/22/2003

TIME: 15:13:23

Input Set : A:\255-013.st25.txt

Output Set: N:\CRF4\01222003\I582340B.raw

```

300 Thr Gln Arg Gly Asp Ile Phe Thr Glu Tyr Ile Cys Gln Cys Pro Val
301 85                               90                               95                               100
303 ggc tac tcg ggc atc cac tgt gaa acc gag acc aac tac tac aac ctg      393
304 Gly Tyr Ser Gly Ile His Cys Glu Thr Glu Thr Asn Tyr Tyr Asn Leu
305                               105                               110                               115
307 gat gga gaa tac atg ttc acc aca gcc gtc ccc aat act gcc gtc ccc      441
308 Asp Gly Glu Tyr Met Phe Thr Thr Ala Val Pro Asn Thr Ala Val Pro
309                               120                               125                               130
311 acc ccg gcc ccc acc ccc gat ctt tcc aac aac cta gcc tcc cgt tgt      489
312 Thr Pro Ala Pro Thr Pro Asp Leu Ser Asn Asn Leu Ala Ser Arg Cys
313                               135                               140                               145
315 tct aca cag ctg ggc atg gaa ggg ggc gcc att gct gat tca cag att      537
316 Ser Thr Gln Leu Gly Met Glu Gly Gly Ala Ile Ala Asp Ser Gln Ile
317                               150                               155                               160
319 tcc gcc tcg tat gtg tat atg ggt ttc atg gcc ttg cag cgc tgg ggc      585
320 Ser Ala Ser Tyr Val Tyr Met Gly Phe Met Gly Leu Gln Arg Trp Gly
321 165                               170                               175                               180
323 ccg gag ctg gct cgt ctg tac cgc aca ggg atc gtc aat gcc tgg cac      633
324 Pro Glu Leu Ala Arg Leu Tyr Arg Thr Gly Ile Val Asn Ala Trp His
325                               185                               190                               195
327 gcc agc aac tat gat agc aag ccc tgg atc cag gtg aac ctt ctg cgg      681
328 Ala Ser Asn Tyr Asp Ser Lys Pro Trp Ile Gln Val Asn Leu Leu Arg
329                               200                               205                               210
331 aag atg cgg gta tca ggt gtg atg acg cag ggt gcc agc cgt gcc ggg      729
332 Lys Met Arg Val Ser Gly Val Met Thr Gln Gly Ala Ser Arg Ala Gly
333                               215                               220                               225
335 agg gcg gag tac ctg aag acc ttc aag gtg gct tac agc ctc gac gga      777
336 Arg Ala Glu Tyr Leu Lys Thr Phe Lys Val Ala Tyr Ser Leu Asp Gly
337                               230                               235                               240
339 cgc aag ttt gag ttc atc cag gat gaa agc ggt gga gac aag gag ttt      825
340 Arg Lys Phe Glu Phe Ile Gln Asp Glu Ser Gly Gly Asp Lys Glu Phe
341 245                               250                               255                               260
343 ttg ggt aac ctg gac aac aac agc ctg aag gtt aac atg ttc aac ccg      873
344 Leu Gly Asn Leu Asp Asn Asn Ser Leu Lys Val Asn Met Phe Asn Pro
345                               265                               270                               275
347 act ctg gag gca cag tac ata agg ctg tac cct gtt tcg tgc cac cgc      921
348 Thr Leu Glu Ala Gln Tyr Ile Arg Leu Tyr Pro Val Ser Cys His Arg
349                               280                               285                               290
351 ggc tgc acc ctc cgc ttc gag ctc ctg ggc tgt gag ttg cac gga tgt      969
352 Gly Cys Thr Leu Arg Phe Glu Leu Leu Gly Cys Glu Leu His Gly Cys
353                               295                               300                               305
355 ctc gag ccc ctg ggc ctg aag aat aac aca att cct gac agc cag atg      1017
356 Leu Glu Pro Leu Gly Leu Lys Asn Asn Thr Ile Pro Asp Ser Gln Met
357                               310                               315                               320
359 tca gcc tcc agc agc tac aag aca tgg aac ctg cgt gct ttt ggc tgg      1065
360 Ser Ala Ser Ser Ser Tyr Lys Thr Trp Asn Leu Arg Ala Phe Gly Trp
361 325                               330                               335                               340
363 tac ccc cac ttg gga agg ctg gat aat cag ggc aag atc aat gcc tgg      1113
364 Tyr Pro His Leu Gly Arg Leu Asp Asn Gln Gly Lys Ile Asn Ala Trp

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/582,340B

DATE: 01/22/2003
TIME: 15:13:24

Input Set : A:\255-013.st25.txt

Output Set: N:\CRF4\01222003\I582340B.raw

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:29 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:27
L:274 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:272